

REMARKS/ARGUMENTS

Claims 1-35 were pending in this application at the time the present Office Action was mailed. Claims 25, 26 and 29 have been amended, previously withdrawn claims 36-64 have been cancelled, and new claims 108-111 have been added. Accordingly, claims 1-35 and 108-111 are now pending.

In the Office Action mailed December 2, 2002, claims 1-24, 28 and 31 were indicated to be allowed or to include allowable subject matter, and the remaining claims were rejected. Specifically, the status of the application in light of this Office Action is as follows:

- (A) Claims 36-64 stand withdrawn as being drawn to an unelected species;
- (B) Claims 26, 29 and 30 stand rejected under 35 U.S.C. § 112, second paragraph;
- (C) Claims 25, 27 and 32-34 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,368,190 to Easter et al. ("Easter");
- (D) Claim 35 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Easter; and
- (E) Claims 1-24 were allowed and claims 28 and 31 were indicated to be allowable if rewritten in independent form.

The undersigned attorney wishes to thank the Examiner for engaging in a telephone conference on February 28, 2003. During the telephone conference, the Examiner indicated that claim 25, as amended in this response, is patentable over the applied reference. The following remarks summarize and expand upon the February 28 telephone conference between the Examiner and the undersigned attorney.

A. Cancellation of Withdrawn Claims

Claims 36-64, previously withdrawn from further consideration in light of a species restriction requirement, have been cancelled.

B. Response to the Section 112 Rejection

Claims 26, 29 and 30 were rejected under 35 U.S.C. § 112, second paragraph. Claims 26 and 29 have been amended to clarify the antecedent basis for first and second electrodes. Accordingly, the Section 112 rejection of claims 26 and 29 (as well as claim 30, which depends from claim 29) should be withdrawn.

C. Response to the Section 102 Rejections

Claims 25, 27 and 32-34 were rejected under 35 U.S.C. § 102(e) as being anticipated by Easter. Claim 25 has been amended in a manner indicated by the Examiner to patentably distinguish this claim over Easter. Accordingly, the Section 102 rejection of claim 25 should be withdrawn. Claims 27 and 32-34 depend from claim 25. Accordingly, the Section 102 rejection of these claims should be withdrawn for the reasons discussed above and for the additional features of these dependent claims.

Claim 27 has also been rewritten in independent form, and with clarifying amendments, as new claim 108. Accordingly, new claim 108 includes, in addition to the features of claim 25, "applying a pressure with an electrolytic fluid to force at least one of the polishing surface [of a polishing pad] and the microelectronic substrate against the other." An advantage of this feature is that the electrolytic liquid, which can be used to electrolytically remove conductive material from the microelectronic substrate, can also be used to control the contact force between the microelectronic substrate and the polishing pad. Easter fails to disclose or suggest such a feature. In particular, Easter discloses in Figures 1 and 3, a slurry supply nozzle 46 that applies slurry from a source to the surface of a polishing pad 42. The slurry supply nozzle 46 is spaced apart from any interface between Easter's polishing pad 42 and his wafer 38. Easter further discloses at column 3, lines 51-54 "structure is also provided to apply downward force on the wafer carrier 30 such that a semiconductor wafer 38 is pressed downward toward the platen 20." However, Easter fails to disclose or suggest using an electrolytic fluid to apply a force between a microelectronic substrate and a polishing pad. Accordingly, Easter does not support a Section 102 rejection of claim 108 and claim 108 should accordingly be allowed.

D. Response to the Section 103 Rejection of Claim 35

Claim 35 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Easter. Claim 35 depends from claim 25, which as discussed above, was indicated by the Examiner to be patentable over Easter. Accordingly, the Section 103 rejection of claim 35 should be withdrawn for the reasons discussed above and for the additional features of claim 35.

E. Response to the Indication of Allowable Subject Matter

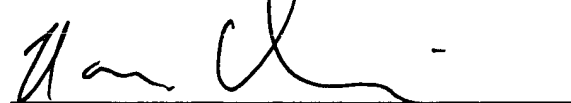
Claims 1-24 were allowed and have not been amended in this response. Claims 28 and 31 were indicated to be allowable if rewritten in independent form. Of these claims, claim 31 has been rewritten in independent form as new claim 111. Claim 29, which was previously rejected only under 35 U.S.C. § 112, second paragraph, has been rewritten in independent form as new claim 109. Claim 110 depends from claim 109 and corresponds to claim 30. Accordingly, claims 109-111 should be allowed.

F. Conclusion

In light of the foregoing amendments and remarks, all of the pending claims are in condition for allowance. Applicants, therefore, request reconsideration of the application and an allowance of all pending claims. If the Examiner wishes to discuss these pending claims or any other aspects of the application, the Examiner is encouraged to contact John Wechkin by telephone.

Respectfully submitted,

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Date: March 3, 2003

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Appl. No. 09/888,002

APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

25. (Amended) A method for removing electrically conductive material from a face surface of a microelectronic substrate, comprising:

engaging the microelectronic substrate with a polishing surface of a polishing pad;

coupling the conductive material to a source of electrical potential;

removing at least a portion of the conductive material from the microelectronic substrate by passing a varying current through the conductive material while moving at least one of the microelectronic substrate and the polishing pad relative to the other and while the microelectronic substrate is engaged with the polishing pad; and

removing gas from a region adjacent to between the face surface of the microelectronic substrate and/or an electrode facing toward the face surface of at least proximate to the microelectronic substrate while the conductive material is removed from the microelectronic substrate.

26. (Amended) The method of claim 25, wherein the electrode is one of a first electrode and a second electrode, and wherein the method further comprisingcomprises:

disposing an electrolytic fluid adjacent to the face surface of the microelectronic substrate;

interposing the polishing surface between the face surface and the first and second electrodes;

coupling at least one of the first and second electrodes to the source of electrical potential; and

electrically coupling the first and second electrodes to the face surface of the microelectronic substrate through the polishing surface of the polishing pad via the electrolytic fluid.

29. (Amended) The method of claim 25, wherein the electrode is one of a first electrode and a second electrode and wherein the method further comprising comprises positioning both first and second electrodes to face toward the face surface of the microelectronic substrate and coupling at least one of the electrodes to the source of electrical potential.